

## OUR MOST ABUNDANT RESOURCE

is because salt makes water weigh more. Therefore, a body doesn't need to displace as much water in order to float. You can test this with some salt, a glass of water, and a match stick weighted so it will float head downwards. Measure the distance the match sinks below the plain water. Take the match out, add salt, stir until the salt is dissolved, and then put the match in again. Then measure the distance the match sinks.

### SELF-CHECKING QUESTIONS

1. How much does 10 cu. ft. of water weigh? 2. What are hydrometers used for? 3. Why do objects seem to weigh less in water? 4. What supports a floating object? 5. Why do certain objects float? 6. How does a submarine submerge? How does it return to the surface? 7. Why is it easier to float in salt water than in plain water?

### Water Is Incompressible

It is easy to put a cork into a bottle that is filled with nothing but air. But if the bottle is full to the top with water, the cork won't go in until some of the water is taken out. This is because air can be compressed, but water can't be. At least, even the most powerful machines cannot compress water more than just a tiny bit.

**Hydraulic pressure.** If you try to force a cork into a full bottle of water, the force you use on the cork will press against every bit of the inside of the bottle. That's because water and other liquids exert pressure equally in every direction. If the area of the bottom of a cork is one square inch and you strike it with 25 pounds of force, 25 pounds of force will be applied to every square inch of the bottle. If the bottle has an inside area of 100 square inches, the bottle will have to contain a force of 2500 pounds or break.

That is how liquids transmit and multiply force. You can easily see how water multiplies force. Turn on a water faucet. Gradually cover more and more of the opening. See how the force of the water increases?

Farming, business, and industry make much use of water's ability to withstand compression and to transmit and multiply force. On modern tractors a flick of a lever gives a giant's strength

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